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REMARKS

I. Status of the Claims

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

In the specification, paragraphs have been amended on pages 41, 42, 70, 71, 72, 74, 76, 80, 88, 90, 91, 96.

Claims 1 – 8, 18 – 20 and 26 – 27 are requested to be cancelled. The cancellation of claims does not constitute acquiescence in the propriety of any rejection set forth by the Examiner. Applicants reserve the right to pursue the subject matter of the canceled claims in subsequent divisional applications.

Claims 11, 14 and 16 are currently being amended. Support for the amendments to claims 11, 14 and 16 is found in Figure 3 and SEQ ID NO: 36.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 9 – 17 and 21 – 25 are now pending in this application.

II. Response to Issues Raised by Examiner in June 30, 2004 Interview

Summary

The Examiner acknowledges that to correctly view the sequence depicted in Figures 3a-3d, the pages should be placed side by side, as indicated by the illustration on page 3/15 of the Figures. Further to the Examiner's request, Applicants have amended the brief

description of Figure 3 to recite “[f]igure 3a should be viewed adjacent to Figure 3b and Figure 3c should be viewed adjacent to Figure 3d.”

The Examiner also notes that residue 40 is a tryptophan in SEQ ID NO: 36 and a histidine in Figure 3a. As shown in Figure 3a (see Exhibit 1), the codon encoding amino acid residue 40 is TGG, which codes for tryptophan. However, due to a clerical error, histidine is listed as amino acid residue 40 in Figure 3a. Amino acid residue 40 in SEQ ID NO: 36 is correctly listed as tryptophan. Applicants will file corrected drawings shortly. No new matter has been added.

III. Response to Issues Raised By Examiner In July 2, 2004 Communication

The Examiner states that “the claim(s) are directed to the amino acid sequences listed in Figure 3 which do not correspond to any of the sequences in the sequence listing nor do they have their own sequence identifier. In addition, the specific sequence that corresponds to Figure 3 needs to be recited in the claim(s) with the sequence identifier (i.e. SEQ ID NO), see claim 11.” As discussed in detail above, Applicants note that SEQ ID NO: 36 corresponds to Figure 3. Applicants have amended the claims by replacing the term “Figure 3” with “SEQ ID NO: 36.”

IV. Issues Related to Figure 2 and SEQ ID NOS 33 and 34

Attached as Exhibit 2 is a copy of Figures 2a-f showing errors that have been corrected in the attached Sequence Listing (SEQ ID NO: 34). The errors relate to incorrect amino acids encoded by the recited codon. For example, the codon encoding amino acid residue 49 in Figure 2a is TTC, which codes for phenylalanine. However, due to a typographical error, tyrosine is listed as amino acid residue 49 in Figure 2a. Applicants will file corrected drawings shortly. No new matter has been added.

CONCLUSION

Applicants believe that the present application is now in condition for allowance.
Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

By 

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(35)

1 GAATTCCGGCACGAGCGGGCTGGACCTTGCTCGCCCGCGGCCATGAGCCGCAGCCTGGACTCGG
1 M S R S L D S

(36)

121 CGCCGGCGAGTTCAAGCGACATCCAGGCCCTGCTCGGCCGCCCTGGAAAGGCTGACGGCGTGTGCTCCA
26 A G E F S D I Q A C S A A H K A D G V C S
W

241 GCCTTATGATCAAGACCGAGTAATCCTCTCCCTGCTCCAGGAAGAGGGACACAGCGACTACATTA
66 P Y D Q T R V I L S L L Q E E G H S D Y I

361 ACCCTTGCCCTCACACCCCTGCTAGACTCTGGAGACTGGCTGGGAGTTGGGGTCAAGGTGATCC
106 P L P H T L L D F W R L V W E F G V K V I

481 CCAGGAGCAGGAGCCACTGCAGACTGGCTTTCTGCATCACTCTGATAAAGGAGAAGTGGCTGA
146 Q E Q E P L Q T G L F C I T L I K E K W L

601 TGTGTACCAAGCTACAGTATATGTCTGGCCAGACCGTGGGGTCCCCAGCAGTCCTGACCACATGC
186 V Y Q L Q Y M S W P D R G V P S S P D H M

721 TGTCCACTGCAGTGCAGGTTGTGGCGAACAGGCCTCTGTGCACCGTGGATTATGTGAGGCAGC
226 V H C S A G C G R T G V L C T V D Y V R Q

841 GATGAGGAAGCAGCGGCCTCGGGCGTGCAGACAGAGGGAGCAGTACAGGTTCTGTACCAACACGG
266 M R K Q R P A A V Q T E E Q Y R F L Y H T

961 CAAAGAGAATTGTGCCCACTCTACGACGATGCCCTCTCCCTCCGGACTCCCCAGGCACTCTCG
306 K E N C A P L Y D D A L F L R T P Q A L L

1081 GGGCCACGCCATGGCTGACACCTADCGGGAGGAGCAGAAGCCGGGGCTCCAGGGCGCCGGGA
346 G H A M A D T Y A E E Q K R G A P A G A G

1201 CTACAGCAAGGTGACGCCGCGGCCAGCGACCCGGGGCGACGCCGGAGGACGCCAGGGGGACGC
386 Y S K V T P R A Q R P G A H A E D A R G T

1321 CGTGGCGGGTGGAGCTCAGACGGTGGCTAGGTTCAACCTGCGCATGGGAGGCCGAAGGGTC
426 V A G G A Q T G G L G F N L R I G R P K G

1441 TGTTGCCCTTGAGCTGGACTGCTGATGCCCGGTGCTGCTGAGCGCCGTGCCGAGAATGGA
1561 TGCCCAATGACTGTAGCATTCAAGGCTTGAGGCTGGAGGAGGTAGCTAGGGTATAGTGGCTGGTG
1681 TTATGAAGGGGAGAAGGGACAGATGAGCTTCCGGAGACTGCTCTCCTCACACACAGCACTAGTC
1801 GTGGATGGACACTTCGCCATCCAGGCAGAACTAAGCCAGGCATAACCACAGCCAAGCAGATTAAC
1921 AACCTGGACAGACAGCAAAGCTCAGAGATAACAGTCCACAGGTGGACAAAGGATCCCCAGCCA
2041 AAAACAGCCCCAAAAGACAGACATCTGCTAGCTGGACAGCCAGGTGGACCCCCCTAAGTTAG
2161 TCAGACCCCACTCCCTCAGGTGGCTGGCTGACAGACCTTCTGGCCAGACAGACTCCTAAC

Fig. 3a

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AATTCCGGCGCCAGTCCCGCTCGCGCCGCGCTCCGCTCCGGCTCGGCTCCGGCT
1 M A R A Q A L V L A L T F Q L C
CGACCTCCAACCATGGCCCGTGCCTCAGGCCTCGTGTGGCACTCACCTTCAGCTCTGC
37 V P C E Y S Q A Q Y D D Y P W E Q V R I F
77 T C C C A G C A T G C C C C A G G C C A G C G A G C C A T G T C A T C T T C C A G A G C C T G A G C G A G A A T G A T
117 S O H A P Q P R A H V I F Q S L S E N D Q G
157 | C G G T C T A C G T G C G C G T T A A T G G G G G C C C C T G G C G A G T G C T G T G G A A T A T G A C T G G A
R | G V Y Y R V N G G V | L A S A V W N M T G P
197 T A T C A G G T G C T G T T G A G G C C C T C A T C T C C C A G A C C G C A G G G G C T A C A T G G G C C T A G A T
Y Q V L F E A L I S P D R R G Y M G L D
237 G T G G A G G T C A A C G C G G G C C A G A A C G C G T C T T C C A G T G C A T G G C C G C G G G A G A G C C C A T G
V E V N A G Q N A S F Q C M A A G E P N M
277 A C A T C A G C C A C C G G C T T C C T G G C C A C T T C C C G T G G C T G C G T G C T G G C C C C A C C
I V K E P P T P I A P P Q L L R A G P T
317 G A G A T T G A G T A C C G C A T G G C G C G C G G C C T G G G C T G A G G T G C A O G C C G T C A G C C T G C A G
E I E Y R M A R G P W A E V K A V S L Q H
357 C G T C C C G G A G A C G G C G G C A C T G G C G C G T G G G C C A C C C C T C A T C A G C C G C A C C A A T G C G C
R P G D G G T G R W A T P H Q P H Q M R
397 C T G C A G T G G G A A C C A C T G G G C T A C A A C G T G A C G C G T T G C C A C A C C T A T A C T G T G T C G C T G
L Q W E P L G Y N V T R C H T Y T V S L
437 G A G C A A G G T G T C A G C C G C T A C A C C A T C A A G A A C C T G C T G C C C T A T C G G A A C G T T C A C G T G
E Q G V S R Y T I K N L L P Y R N V H V
477 G A T G A G G A T G T G C C C A G T G G G A T T G C A G C C G A G T C C C T G A C C T T C A C T C C A C T G G A G G A C
D E D V P S G I A A E S L T P T P L E D

Fig. 2a

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CGCTCGGGCTGGGCTGGCTCCGGGGCGGCGTCCCCGGCCGGGCCGGACGC 120
GCGCCGGAGACCGAGACTCCGGCAGCTGGCTCACCTTGAGGAGGCAAGTGACCCAGCA 240
A P E T E T P A A G C T F S E A S D P A
| E |
CACCTGGCACCCGGGACCTGCGGACCTGCCCCACGGCTCCTACTTGATGGTCAACACT 361
H F G T R A P A D L P H G S Y L M V N T
| P |
ACCCACTGTGTGCAGTCAGCTACTTCCTGTACAGCCGGGACGGCACAGGCGGCACCC 481
T H C V Q F S Y F L Y S R D G T G G T L
| . |
TCCCACGGCCGTCACTGGCACCCAGGCTGAGCTGGCTGTACAGCACCTTCTGGCCCAATGAA 601
S H G R Q W H Q A E L A V S T F W P N E
| . |
GACATCCTGCTTCTCAGCTACCCCTGCGCAAAGGCCCCACACTTCTCCGCCTGGCGAC 721
D I L L S Y P C A K A P H F S R L G D
| . |
CGCCAACGCTTCTCTTGCAACGGCAGAGGGGGCCCTGGTGCCTGGCGGGCGTTGGC 841
R Q R F L L Q R Q S Q A L V P A Q A F G
| G | G |
GACCTGTACCGCTGTGTCTCCAGGCCCCGCGCGCGCGTCTCTAATTUCCGAGCTC 961
D L Y R C V S Q A P R G G V S N F A E L
| P |
TACCTCATCATCCAGCTAACACCAACTCCATCATGGCGACGGGCCGATCGTGCAGAAG 1081
Y L I I Q L N T N S I I G D G P I V R X
| K |
ACCTACAAGCTGTGGCACCTCGACCCGACACAGAQTATGAGATCAGCGTGCTGCTCACG 1201
T Y K L W H L D P D T E Y E I S V L L T
| D |
AGAGCCCATGAGGGCCCCAAAGGCCTGGCTTTGCTGAGATCAGGCCGTCAGCTGACC 1321
R A H E G P K G L A F A E I Q A R Q L T
| . |
TGCTATCACTACACCCCTGGCAGCAGCACACCAACAGACCATCCGAGAGTGTGAAGACA 1441
C Y H Y T L G S S H N Q T I R E C V K I
| . |
AGGCTTGTCTCACTAACCTGAGGGGGCAGGAGGCAAGGAGGTCACTTCCAGACG 1561
R L V L T N P E G R X E G K E V T F Q T
| K |
ATGATTTCTCAAGTGGAGGAGGCCAGGAGCCCAATGGTCTCATCACCCAGTATGAG 1681
H I F L K W E E P Q E P N G L I T Q Y E
| M |

Fig. 2b

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ATCAGCTACCAAGAGCATCGAGTCATCAGACCCGGCAGTGAACGTGCCAGGCCACGACGT
517 I S Y Q S I E S S D P A V N V P G P R R

ACCTACCTGTTCTCCGTGCAGGGCCCGCACAGGCAAAGGCTTCGGCCAGGCGGACTCACT
557 T Y L F S V R A R T G K G F G Q A A L T

GGCGAGTCTGAGAACACCATCACCGTGTGCTGAGGCCGGCACAGGGCCGGTGCGCCC
597 G E S E N T I T V L L R P A Q G R G A P

TGGACAGGACTGCTTCCCAGTGCCATTGACCTTCGAGGCCGGCTGGCCCCAGGCTGGTG
637 W T Q L L P S A I D L R G G A G P R L V
G
GGTGACAACCAGACCTACCGAGGCTCTGGAACCCACCACTTGAGCCTAGGAAGGCCTAT
677 G D N Q T Y R G F W N P P L E P R K A Y

ATTGCCAGGAAAGCTGCCTGCAAGGAAAGCAAGCGGCCCTGGAGGTGTCCCAGAGATCG
717 I A R K A A C K E S K R P L E V S Q R S

CTGGGTGCCATCATTGTCATCATCCGCAAAGGGAAAGCCGGTGAACATGACCAAGGCCACC
757 L G A I I V I I R K G K P V N M T K A T

CAGAGCACCCCTGCAGGAGGACCGAGCGGCTGGGCCTGTCTTCACTGGACACCCATGGCTAC
797 Q S T L Q E D E R L G L S F M D T H G Y

TCCCCGAGGCGTCCCTGTGGCCGGAAAGGGCTCCCCATACCAACACGGGGCAGCTGCACCCCT
837 S P R R P C G R K G S P Y H T G Q L H P

GGCTTCAAGCAGGAGTATGAGAGCTCTTGAAGGCTGGACGCCAAAGAAGAAAGAC
877 G F X Q E Y E S F F E G W D A T K K K D

CACCOGATGCTGGGAGACCCCAATGCCGACTACATTATGCCAACTACATAAGATGGTTAC
917 H P M L G D P N A D Y I M A N Y I D G Y
N
TGGCGTATGGTGTGGCAGGAGCACTGTTCCAGCATCGTCATGATCACCAAGCTGGTCAG
957 W R M V W Q E H C S S I V M I T K L V E

AAGATTATGCTGGTGAAGACAGAGACCCCTGGCTGAGTATGTCGTGCGCACTTTGCCCTG
997 K I M L V K T E T L A E Y V V R T F A L

Fig. 2c

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ACCATCTCCAAGCTCCGCAATGAGACCTACCATGTCTTCTCCAACCTGCACCCAGGCACC 1801
T I S K L R N E T Y H V F S N L H P G T

GAGATAACCACAACTACATCTCTGCTCCCAGCTTGATTATGCCGACATGCCGTACCCCTG 1921
E I T T N I S A P S F D Y A D M P S P L

ATCAGTGTGTACCAAGGTGATTGTGGAGGAGGAGCGGGCGCGAGGCTGCAGGGGGACGAGG 2041
I S V Y Q V I V E E E R A R G C G G T R

CACTACTTCGGGGCCGAACCTGGCGGCCAGCAGTCTACCTGAGGCCATGCCCTTACCGTG 2161
H Y F G A E L A A S S L P E A M P F T V

CTCATCTACTTCAGGCAGCAAGCCACCTGAAGGGGGAGACCCGGCTGAATTGCATCCGC 2281
L I Y F Q A A S H L K G E T R L N C I R

GAGGAGATGGGGCTTATCCTGGGCATCTGTGCAGGGGGCTTGCTGTCCCTCATCCTCTC 2401
E E M G L I L G I C A G G L A V L I L L

GTCAACTACCGCCAGGAGAACACACATGATGAGCGCCGTGGACCGCAGCTCACAGAC 2521
V N Y R Q E K T H M M S A V O R S F T D

AGCACCCGGGGAGACCAGCGCAGCGGTGGGTCACTGAGGCCAGCAGCCTCCTGGGGGC 2541
S T R G D Q R S G G V T E A S S L L G G

GCGGTGCGTGTGCGCAGACCTCTGCAGCACATCAACCATGAAGACGGCCAGGGTTAC 2761
A V R V A D L L Q H I N Q M K T A E G Y

AAGGTCAAGGGCAGCCGGCAGGAGCCAATGCCCTATGATGGCAAGGAGTGAAACTG 2881
K V K G S R Q E P M P A Y D R M R V X

CACAGGTCAAACCACTTCATGCCACTCAAGGGCCGAAGCCTGAGATGGTCTATGACTTC 3001
H R S N H F I A T Q D P K P E M V Y D F

GTGGGCAGGGTGAAATGCTACGGTACTGGCCGGAGGAGCTCAGACACCTACGGGACATC 3121
V G R V K C S R Y W P E D S D T Y G D I

GAGCGGAGAGGGCTACTCTGCCCGCACGAGGTCCGCCAGTCCCACTTCACAGCGTGGCCA 3241
E R R G Y S A R H E V R Q S H F T A W P

Fig. 2d

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1037 GAGCATGGCGTCCCCCTACCATGCCACGGGGCTGCTGGTTCATCCGGCGGGTGAAGGCC
 E H G V P Y H A T G L L A F I R R V K A
 CGTTGCTATATCGTCCTGGATGTGATGCTGGACATGGCAGAGTGTGAGGGCGTCGTGGAC
 1077 G C Y I V L D V M L D M A E C E G V V D
 H
 CAGTACATCTTCATTCAATGATGCAATCCTGGAGGGCTGCCTGTGTGGGAGACCACCATC
 1117 Q Y I P C I H D A I L E A C L C G E T T I
 TCCTCCCAGCTGCAGGGAAAGAGTTCCAGACGCTGAACCTGGTACCCCGCCGCTGGACGTG
 1157 S S Q L R E E F Q T L N S V T P P L O V
 CTGCCGCCGACCGCTGCCTGCCCTTCATCTCCACTGATGGGACTCCAACAACCTAC
 1197 L P P D R C L P F L I S T D G D S N N Y
 CCGCTGCAGAGCACCAACGCCGACTTCTGGCGCTGGTCTACGATTACGGGTGCACCTCC
 1237 P L Q S T T P D F W R L V Y D Y G C T S
 CCAGAGCCAGGCCGGCAGCAATATGGCCTCATGGAGGTGGAGTTATGTGGGACAGCT
 1277 P E P G R Q Q Y G L M E V E F M S G T A
 GACCTGCTGGTGCGGCACCTCCAGTTCCCTGCCTGGCTGCATACCGGGACACACCTGAC
 1317 D L L V R H F Q F L R W S A Y R D T P D
 GATGGGGCGACCATCGTGCAC TGCC TAAACGGGGAGGAOGCAGCGGACCCCTCTGC
 1357 D G R T I V H C L N G G G R S G T F C A
 CAAACCTCCGAACTACAAACCAACATGGTGGAGACCATGGATCAGTACCACTTTGC
 1397 Q T L R N Y K P N M V E T M D Q Y H F C
 GGGCACCCACTGCACACTCAGGGCCAGACCCACCATCCTGGACTGGCGAGGAAGATCAGT
 TCTTGCTCCCCCTTCCACTGTGGCGAGGGCTTCTGCTTGTCCCATGGCGGGTGGTGGG
 GTGCTGAGAGGCCCTGGTGCTGCCAGACTGACAAAGGCTCAGGACGGCTGGCTCTGG
 GCAGAGAGCATCCCAAGCCAAGGTTCCACTCAGCTGCCCCCTCTGCATGTGGTAGAG
 AGCAGGCTCAATTCTGATAGCCAGTGGGCACACTGACTGTCTCCCTGACCTGGGAACTGC
 CACTTGCTTCCCTGATATGTGCTCTGACTTCCCTGAAACCAGGACTGCTTACCTG
 CCTCTTCTGATATCTGCTCTGACTTCCCTGACCTGGGCTGGTCAACCCCTCTGGAGTT
 CAGAGCA
 TCTCTTAAAATGGGGCAGGCCACACCCCCATTCCGTGCCTCAATTCCCCATCTGAAA
 TGTAAAGCGCTTGTAAATAACGTGCTCTGAATGCCAAAAAAACAAAAAA

Fig. 2e

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TCCACCCCACCTGATGCCGGGCCATTGTCACTGCAGCGCGGGCACCGGCCGCACA S T P P D A G P I V I H C S A G T G R T	3361
ATTTACAACCTGTGTGAAGACTCTCTGCTCCGGCGTCAACATGATCCAGACTGAGGAG I Y N C V K T L C S R R V N M I Q T E E	3481
CCTGTCACTGAGTTCAAGGCCAACCTACAAGGAGATGATCCGCATTGATCCTCAGAGTAAT P V S E F K A T Y K E M I R I D P Q S N	3601
GAGGAGTGCAGCATGCCCTGTTGCCCGGAACCGCGAACAGAACCGCAGCATGGACGTC E E C S I A L L P R N R D K N R S H D V	3721
ATTAATGCAGCCCTGACTGACAGCTACACACGGAGGTGGCCTTCATGGTGACCCCTGCAC I N A A L T D S Y T R R S A F M V T L H	3841
ATCGTCATGCTCAACCAGCTGAACCAAGTCCAACCTCCGCTGGCCTGCCTGCAGTACTGG I V M L N Q L N Q S N S A W P C L Q Y W	3961
GATGAAGACTTAGTGGCTCGAGTCCTCCGGGTGCAGAACATCTCTGGTTGCAGGAGGGA D E D L V A R V F R V Q N I S R L Q E G	4081
TCCAAGAAGGCCCTTGCACCTGCTGGCTGAGGTGGACAAGTGGCAGGCCAGAGTGGG S K K A F L H L L A E V D K W D A E S G	4201
TGCGCCACGGTCTGGAGATGATCCGCTGCCACAACCTGGTGGACGTTTCTTGCTGCC C A T V L E M I R C H N L V D V F F A A	4321
TACGATGTGGCCCTGGAGTACTGGAGGGCTGGAGTCAAGATAAGCGGGCCCTGGCCTG Y D V A L E Y L E G L E S R	4441
GCCTCCTGCTGCCAAACACACTCCCATGGCAAGCACTGGAGTGGATGCTGGCTA CCAAGGAGGAGCTTAGCAAGTCTGCACCCCCACCCCATAGGGTCTGCAGGCCT	4561
GGGACTCAGGCCAACGGGGTTGGCAGGATCCTGGTTTGGGAGGGATGAGTGAGGCCCT	4681
GATGTAATGGGACTTGGCATTAGGATTCATCTGGGGACCCCCCTGAAGGTCCCCCCC	4801
AGGCCCTCCTCCCCACTGCCCTCCAGCCCCCTGAGATACTTGCTCACTATCCCTCCC	4921
TCCCATGGGGGCTCTTCCCTGCCTGACCCACTGTTGCAGAATGAGTCACCTCGCCCC	5041
TCTGCAAGGCTGAACAACAGCCCCCTGGGGTTGAGGCCCTGTGGCTCTGGTCAGGCTGC	5161
AGAGGTAGGACCAAGTGTGTTTGTGTTATTTTGGTTGGGTGGGTGGGAAGG	5281
CTGTAGATATGACTACTGACCTACCTCGCAGGGGCTGTGGGGAGGCATAAGCTGATGTT	5401
A	5521
	5581

Fig. 2f